

Nursing Educators' Experiences Regarding Students' Mistakes in Clinical Settings

Abstract

Background: There is always the possibility of mistakes for nursing students, given the nature of the clinical wards. Nursing educators are the primary figures responsible for the nursing students' performance in clinical wards. The present study intended to describe nursing educators' experiences in relation to clinical mistakes made by nursing students. **Materials and Methods:** The present research was conducted using a descriptive phenomenological approach in 14 nursing educators. Deep semistructured interviews were performed to gather data, and triangulation and member checking were utilized to ensure data integrity. The data were analyzed using Colaizzi seven-stage method. **Results:** The themes extracted through comparison and analysis included three main themes "encountering an unpleasant event", "internal confrontation" and "the change in the effectiveness of teaching" besides 6 sub-themes including "emotional excitement", "honest reaction to the issue", "struggling with the fear of recurrence of the mistake" "coping with the event", "passive teaching" and "trying to be enhance one's capabilities in teaching". **Conclusions:** Regardless of the possibility of gaining fruitful experiences from a clinical mistake, its occurrence could be followed by negative experiences and consequences for the educators. It is thus essential that appropriate packages in this regard be provided in the empowerment programs for young educators to prepare them for correct confrontation with mistake occurrence. It is suggested that further qualitative studies be conducted to extract the steps educators take in confrontation with nursing students' clinical mistakes.

Keywords: Education, medical errors, nursing, students

Introduction

English dictionaries define "mistake" as a human error in relation to misjudgment, miscalculation, carelessness, etc.^[1] All human beings are liable to make mistakes. Nevertheless, in medical sciences and nursing, where patient safety and human life are at stake, it gains added importance.^[2,3] In fact, we can never completely prevent the occurrence of human mistakes. For example, in case of administration of medications in patients, Taylor *et al.* emphasize that every conscientious nurse tries not to make mistakes; nevertheless, a nurse, as any other human being, may make a mistake.^[4]

Nursing students may experience stress and anxiety in the clinical setting,^[5] and learning procedures demands time; therefore, it is predictable that nursing students will make mistakes.^[6] Taking this into consideration, educators are expected in most cases to accept mistakes made by

nursing students and to support them.^[7] Based on the results of a study conducted in 2012 in Iran, students considered making clinical mistakes synonymous with endangering patients' lives and harming them.^[8] It was also observed that caregiving mistakes angered treatment teams, patients' companions, and nursing educators, and caused fear and guilt in nursing students.^[8] They believe that clinical educators emphasize the prevention of the occurrence of mistakes to such an extent that it can create a feeling in them that no justification will be accepted if they make mistakes^[9] and, in most cases, nursing students who make mistakes are reprimanded.^[10,11]

Most studies on the occurrence of mistakes have focused on nurses' experiences or nurses and doctors' experiences or health and treatment systems^[12-17] or nursing students experiences in clinical settings.^[8,9,18] To clarify the situation

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and create a clear picture of the occurrence of mistakes by nursing students, it is necessary to reveal nursing educators' experiences in relation to clinical mistakes made by nursing students. However, a review of the literature failed to disclose studies in this regard in Iran or abroad. Qualitative research proves effective in analyzing the root causes of phenomena related to human beings.^[8] Therefore, it appears that conducting a qualitative study is the best way of extracting nursing educators' experiences. The purpose in phenomenological studies (a type of qualitative research) is to analyze and explain the structure or nature of life experiences concerning a phenomenon.^[19] Since the present research intended to describe nursing educators' experiences in relation to clinical mistakes made by nursing students, the descriptive phenomenological method was selected.

Materials and Methods

This study was conducted using qualitative descriptive phenomenological design and aimed to describe nursing educators' experiences in relation to clinical mistakes made by nursing students in Tabriz, Iran in 2018. In the present study, informant educators collected the data. The research participants comprised all nursing educators who were working as academic staff members in faculties of nursing and midwifery of Tabriz University of medical sciences and Islamic Azad Universities of Tabriz, Bonab, Maraghe, and Sarab.

The research settings were essentially decided in accordance with the participants' preferences (their offices or treatment and educational centers). The participants were selected through purposive sampling. Data were collected using deep, semistructured interviews. After the study purpose was explained to the participants and informed written consents were obtained for their participation and recording the interviews, the interviews began with general questions like "Would you tell us about your perceptions or experiences when you notice your students making mistakes in clinical settings?" or "How did you feel when you found out a nursing student had made a mistake in a clinical setting?" "How did you perceive this incidence?" These were followed by the follow-up or probing questions, such as "Could you give an example?" "Could you elaborate a little more?"

The selection of participants was continued until data saturation, with the researcher reaching saturation through continuous interviews or studying the codes. After 11 interviews saturation was reached. The interviews were performed in Persian and lasted somewhere between 40 and 60 min. Only two educators were interviewed twice (for more clarity); all the others were interviewed only once. Data collection lasted from July to November 2018. An attempt was made to ensure that the educators participating in the study would qualify as informants (that is they would possess rich experiences about the

subject of the study) and were academic staff members of the affiliated universities.

Data analysis was conducted simultaneously to data collection. Data were analyzed using Colaizzi's seven-stage method in MAXQ 2007 (qualitative) software.^[20] Colaizzi's phenomenological methodology can be used reliably to understand people's experiences; thus, according to the aim of our study, we choose this method for analyzing data.^[21] To check the accuracy and consistency of data, the four criteria by Streubert and Carpenter (validity, reliability, conformability, and transferability) were adopted.^[19] The researcher tried to reflect the lived experiences of the participants in the obtained findings. For member checking, the main concepts, along with the categories and their contents, were returned to three of the participants, and they were asked if those concepts were indicative of what they had experienced. Reliability was obtained through prolonged engagement with data by the researcher. To enhance conformability, codes and the extracted concepts were referred to external auditors who reviewed the whole process of the study, and performed an additional inspection of the coding process and reached a consensus. For transferability, the extracted concepts were given to educators who did not attend the study, to obtain their judgment about the similarity of the research results and their own experiences.

Ethical considerations

The ethical considerations observed in this research included obtaining informed consents from the participants before their participation in the research, recording the interviews, not listing the names of the participants in the transcribed texts, and observing the principle of confidentiality (ethical code: IR.TBZMED.REC.1397.141).

Results

The demographic characteristics of the participants are presented in Table 1. From the initial interviews conducted with 14 participants, 322 primary codes were extracted in total. Two of the educators were interviewed again to further elucidate the experiences they had recounted. The

Table 1: Sociodemographic characteristics of participants in the study

Variable		Frequency	%
Age (year)	35-40	2	14.29
	41-45	4	28.57
	46-50	5	35.71
	50<	3	21.43
Sex	Female	11	78.57
	Male	3	21.43
Academic degree	Assistant professor	6	42.85
	Instructor	8	57.15

Table 2: Themes extracted from the experiences of participants in the study

Themes	Subthemes 1	Subthemes 2	Examples of codes
Encountering an unpleasant event	Emotional excitement	Sudden burst of emotions Reaction to the student responsible for the mistake Self-blame	Blushing and feeling hot. I was shocked. Mr. . Mr. . what are you doing? - Ordering the repetition of the procedure -Feeling embarrassed - Why? Why in my presence? - Quickly notifying the head nurse - Quickly calling the doctor - Stopping medication immediately
	Honest reaction to the issue	Revealing mistakes Attempt to minimizing complications	- A quick check of blood pressure to detect the severity of the side effect - Bed 7? You said Bed 7! - .Did the student open the tourniquet? - Not allowing the student to perform a complicated procedure - Not allowing students to work independently - Asking a nurse to supervise chemotherapy - Asking for a nurse recheck - Withdrawal into oneself
Internal confrontation	Struggling with the fear of mistake recurrence	obsession Avoiding the situation Asking for support	- Repeated reconstruction of the incident in the mind - Mistakes may happen. - There is always chance to make mistakes when working with a student - Tomorrow is another day - Using past experiences
	Coping with an event	Using self-relaxation techniques Being prepared for mistake occurrence focusing on the future	- Focusing on theoretical rounds - Focusing on rules and principles - In the beginning, I barely let them do clinical tasks. - Some believe that students should only measure blood pressure. -Seeking to identify possible risk factors -The teacher's attempt to master the process of the procedure - Control! The only important thing is to take control. - Shadowing the students
Variation in the effectiveness of teaching	Passive teaching	Teaching theoretical content of clinical education Limiting clinical opportunities for training	
	Trying to enhance one students should only measure	Seeking to identify possible mistakes - Preventing mistakes	

codes were summarized and categorized on the basis of their similarity and congruence after being reviewed several times [Table 2].

Encountering an unpleasant event

This theme includes two subthemes, namely emotional excitement and honest reaction to the issue.

Emotional excitement:

Encountering a mistake, specifically serious mistakes that cause complications in patients, was considered as an unpleasant experience associated with emotional excitement. Emotional excitement could include experience of sudden burst of emotion or reaction by the student responsible for the mistake or experience of the feeling of self-blame.

Regarding the experience of sudden burst of emotions, educator 4 said: *“As an initial feeling, I felt really scared and my ears went red. I might have blushed too. I could completely feel the pressure in that moment.”*

Sometimes, in encountering a mistake, the educator unconsciously reacted to the student, who made the mistake, which was most often limited to an admonition. Educator 2 stated: *“At that moment, I was curious why that student was so careless. Why did he not read the medicine label. however, I suppressed my anger as it could turn into an unpleasant experience for the student. I just asked if he knew the consequences of an incorrect injection.”*

Sometimes, specifically when there was a higher risk of harm to the patient, the reaction was a reprimand. Educator 3 said: *“At that moment, I shouted ... hey what are you doing. hey”*.

In encountering a mistake, educators could feel self-blame. Educator 7 stated: *“At that moment, I asked myself “Why?” “Why did this happen despite my presence?”*

Honest reaction to the issue:

The majority of educators noted that they pointed out the mistake explicitly and revealed the mistake. Educator

12 stated: *"If a student made a mistake. a mistake that could be concealed like when an incorrect drug was used with an IV infusion set, it could be covered up by throwing it away. But if I realized, it could be problematic. I would mention it; yes, I would mention it, and I have had such an experience. a good care for the patient is important. I always tell my students that complications can be prevented by taking timely measures."*

Based on their experience in facing mistakes, the majority of educators said that in addition to informing the head nurse/nurse, revealing the mistake, they employed their knowledge and attempted to minimize the complications. Educator 10 stated: *"When the student told me what he had done. I immediately asked him to remove the catheter. I administered it myself to the other hand and placed an ice bag on the site and regularly checked the patient's conditions. everything went well."*

Experiences related to internal confrontation

This theme includes two subthemes, namely struggling with the fear of mistake recurrence and coping with an event.

Struggling with the fear of mistake recurrence

Some educators struggled with the fear of mistake recurrence after a mistake occurrence, specifically when it could cause complications. Fear of recurrence caused a type of obsession in some educators, for some time. In addition, some of them feared the performance of complex procedures by the same student and tried to avoid the situation.

With respect to the experience of obsession after a mistake, Educator 8 said: *"For a while, I regularly checked in with the ward nurses. I would ask them: Shall I remove the catheter? Shall I administer the volume expander?... Did you say Ringer's solution?... I even asked: is it Ringer?"..... And the educator laughed. "It is true, I remember that I asked three or four times."*

Some educators had avoided procedures that they had made mistakes in, which were often complicated clinical conditions. Educator 10 stated: *"After that [event], I afraid of performing procedures. I mean the complicated procedures, which need to be done carefully... I dreaded them...."*

Although some educators permitted students to perform complex procedures, they preferred the presence of the ward nurses and/or their help and support in any possible way. Educator 11 said: *"I like the ward staff to be present during the procedure, so no mistake is left undetected."*

The experience of coping with an event

In the experience of internally coping with an event, the majority of educators, specifically the experienced ones, tend to believe that students' mistakes were unavoidable and natural. In other words, confronting various student mistakes could have made mistake occurrence normal for

the educator, and thus, made it easy for them to cope with the event. Educator 10 said: *"not anymore! I no longer worry about nonsense...."*

In the majority of cases, the educators used self-relaxation techniques to cope with an event. Educator 8 remarked: *"It was always with me like a terrible nightmare. annoying me greatly. Between the two semesters, I tried to spend time at home alone. I tried to relax at home alone and think about it. I came to terms with myself. However, it took a whole semester."*

Experience of variation in teaching effectiveness after an event

This theme included two subthemes, namely trying to enhance one's capabilities in teaching and passive teaching.

Trying to enhance one's capabilities in teaching

According to some educators, the occurrence of a mistake caused variation in their teaching effectiveness. The occurrence of a mistake in the majority of cases encouraged the educator to seek to identify other possible mistakes during clinical procedures. Educator 10 said: *"I found the causes of a mistake. Now, I am working hard on them..."*

Sometimes after mistake occurrence, educators attempted to prevent the students from making dangerous mistakes through continuous control, regular visits, and more precise supervision.

Educator 1 stated: *"I finally learned.... supervision.... What matters is to control the students. I am all eyes now...."*

Passive teaching

In contrast, in a few cases a mistake resulted in only teaching the theoretical content of clinical education (theory-based teaching instead of practice-based teaching). Educator 7 remarked: *"Actually they - indicating some educators - do not do clinical work, and thus, do not make a mistake. they have no concerns. and do not have stress."*

Sometimes, students' mistakes result in the educator limiting the clinical opportunities for training. Educator 11 said: *"I would just focus on controlling vital signs.... I tell myself, why should I bother myself?"*

In general, according to the results of this study, students' mistakes can be experienced as unpleasant events by the educator. In addition, they can lead to other experiences, such as the educator's internal confrontation with the fear of mistake recurrence. Moreover, it may lead to new experiences, for instance adoption of a clinic training method such as enhancement of capability in clinical training or passive teaching.

Discussion

Nursing mistakes are inevitable among nursing students. There are various clinical training methods for students in

the Iranian education system, and in most cases they are trained directly by nursing educators. In fact, the educator attends the patient's bedside during apprenticeship, and in most cases, the students' activity is semi-independent, which can inevitably result in the occurrence of mistakes. The present study aimed to determine the experiences of nursing educators following the mistakes of students.

According to the results of the present study, mistakes are considered an unpleasant experience for educators, especially if they are severe and lead to complications for the patient; the discovery of such a medical mistake is accompanied by educators' emotional excitement. In the study by Koehn *et al.*, nursing mistake was associated with an immediate experience of turmoil and fluster.^[13] The emotional excitement of educators is accompanied with a reaction to the mistake-making situation, often made by a student, which ranges from admonition to blaming the student depending on the severity of the mistake. In the studies conducted on the experiences of students after the occurrence of a mistake, students were mostly blamed by educators.^[10,11] Sometimes, mistakes were accompanied by educators' self-blame. It should be noted that postmistake blame is considered as a personal consequence of mistakes.^[22] In the present-day health system, there is an erroneous tradition of accusing the person in direct contact with the patient when a mistake occurs.^[8] A study on mistakes indicated that nurses believe that they should be free from any misconduct and mistake, and the violator is guilty and should be punished.^[23] Results of another study on the experiences of nurses indicated fear and concern for losing their sense of respect and dignity among colleagues following a mistake.^[24] It is likely that nursing educators believe that students should not make any mistakes in their presence as a capable teacher; however, it seems that if the student works independently or semi-independently at the bedside, mistakes are possible even in the presence of the best educators.

According to the results of the present study, educators shared their experience of mistakes with other educators or nurses who were in close contact with them in order to reduce emotional excitement. One of the most common and simplest mechanisms experienced when encountering an unpleasant event, is to talk about the event with relatives and friends.^[9,25] In a study on the experiences of nurses, sharing mistakes with the aim of learning and getting colleagues' experiences was reported,^[13] which is in line with the results of the present study.

During an unpleasant event, in addition to feeling disturbed, educators often reported mistakes following their occurrence, since they believed in the importance of preventing the deterioration of the patient's condition by timely action, which was not a futile attempt according to them. In addition, they were directly involved in the management of the incident and prevention of its

consequences. According to Beard, people hide mistakes due to the fear of retaliation and that reporting the mistake may be futile.^[26] Managing critical situations, including students' mistakes, is a criterion for becoming professional nursing educators.^[27] Therefore, positive results of the present study include nursing educators' strengths, having good conscience and their ability to control complications of mistakes.

Results of the present study indicated that although most of the educators experienced fleeting emotional excitement after the incident, they gradually used internal coping strategies to cope with it. The experience of using internal coping strategies in different educators varied from persistent and prolonged conflict with fear of the recurrence an incident to feeling the need for support during clinical education or accepting that mistakes are normal during learning. Some educators reported the permanent fear of mistake recurrence for a long time after encountering student mistakes. Fear is a defense mechanism when encountering threatening situations and it could result in protective behaviors.^[28] However, extreme fear can lead to posttraumatic stress disorder, when incidents are repeated in the mind.^[29] This is probably the reason why some of the educators avoid similar procedures. In other words, the educators used a mechanism to escape potential mistake-making situations due to the fear of repeating the incident. Based on the results of a study on nurses, the memory of a mistake is not completely erased from the mind, rather, its intensity decreases or fades,^[13] which are consistent with the results of the present study. The use of internal coping strategies can be accompanied by mild to intense support by the educator. Feeling the need for support may be intense and even obsessive that is presented as the overcontrolling of situations by the educator. Although controlling and monitoring the requirements of a procedure can prevent the occurrence of mistakes, obsessive and frequent reviewing of the situation annoys the educator. According to Lazarus and Folkman's theory, coping with internal pressure can be problem-focused or emotion-focused. In problem-focused coping, the individual tries to take constructive steps to change the stressful situation or even eliminate it through problem-solving. In emotion-focused coping, they only try to control its emotional consequences.^[30] According to the above theory, obsession is an emotion-focused coping strategy used by some educators to reduce mistake-induced stress. The difference between the scope of the educators' coping procedure and the experienced mistakes varies from acceptance and permanent readiness for mistake occurrence, to fear of mistake recurrence. The authors believe that, in addition to the possibility of accepting and believing in the normality of the occurrence of mistakes in people with a higher work record, it seems that this could be related to factors such as educator's ability to use problem-solving methods to deal with the incident.

According to this study, the occurrence of a mistake can in most cases inspire the educators or, in some cases, passively teaches them. Following mistake occurrence, most educators concluded that further study and determination of all possible causes of a mistake could reduce the recurrence of mistakes in clinical procedures. Correct mistake management and investigation can lead to individuals' positive growth and learning.^[6,31,32] Moreover, stressful situations in the workplace can lead to physical complications in the individual and can also affect their productivity.^[33] It seems that dealing with students' mistakes as a stressful experience can lead to passive teaching, while clinical learning is effective when the learner is also responsible for patient care and examines his/her views as a basis for learning.^[34]

Regarding the limitations of the study, it is necessary to indicate that this study was based on educators' experiences in Iran and our study was a phenomenological study, and that is why we suggest further qualitative studies be conducted to identify the stages and processes of the encountering of students' studies be conducted by educators. Additionally, we suggest further studies, both qualitative and quantitative, be conducted on the true range and expectations of the mistakes committed under the supervision of educators.

Conclusion

The experience of a mistake can either help an educator glean expertise and become accomplished in their field or lead them to adopt a passive teaching style in clinical settings by affecting their evaluation of their own capabilities. Thus, it is of paramount importance to prepare young educators to deal with the possible mistakes of their students through adopting problem-based mechanisms. Thus, it is suggested that educational packages in this regard be provided in educators' educational packages an educator glean expertise and the provision of certain opportunities for educators to share their experience of mistakes in different educational groups, so that the educators are less stressed out after encountering a mistake and are provided with a context to learn from the mistakes committed.

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Conflicts of interest

Nothing to declare.

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